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Abstract Title:

Multi-satellite synergy for aerosol analysis in the Asian monsoon region

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ABSTRACT

Atmospheric aerosols represent one of the greatest uncertainties in environmental and climate research, particularly in tropical monsoon regions such as the Southeast Asian regions, where significant contributions from a variety of aerosol sources and types is complicated by unstable atmospheric dynamics. Although aerosols are now routinely retrieved from multiple satellite sensors, in trying to answer important science questions about aerosol distribution, properties, and impacts, researchers often rely on retrievals from only one or two sensors, thereby running the risk of incurring biases due to sensor/algorithm peculiarities. We are conducting detailed studies of aerosol retrieval uncertainties from various satellite sensors (including Terra-/Aqua-MODIS, Terra-MISR, Aura-OMI, Parasol-POLDER, SeaWiFS, and Calipso-CALIOP), based on the collocation of these data products over AERONET and other important ground stations, within the online Multi-sensor Aerosol Products Sampling System (MAPSS) framework that was developed recently. Such analyses are aimed at developing a synthesis of results that can be utilized in building reliable unified aerosol information and climate data records from multiple satellite measurements. In this presentation, we will show preliminary results of an integrated comparative uncertainly analysis of aerosol products from multiple satellite sensors, particularly focused on the Asian Monsoon region, along with some comparisons from the African Monsoon region.